Docket No. 02-IMP-068 EATNP146US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re **PATENT** application of:

Applicant:	William F. DiVergilio *et al.*
Application No.:	10/702,368
For:	SEGMENTED RESONANT ANTENNA FOR RADIO FREQUENCY INDUCTIVELY COUPLED PLASMAS
Filing Date:	November 6, 2003
Examiner:	Rudy Zervigon
Art Unit:	1792

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicant submits this Reply Brief in response to the Examiner's Answer mailed June 26, 2008, in connection with the appeal of the above-identified case.

A. REJECTION OF CLAIMS 13-18 AND 20-25 UNDER 35 U.S.C. § 103(a)

Claims 13-18 and 20-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 2001/63981 (Weiler) in view of U.S. Patent 5,846,883 (Moslehi). A reversal of the rejection of claims 13-18 and 20-25 is requested for at the least the following reasons.

i. The combination of Weiler and Moslehi is improper because a combination therefore will render Weiler unsatisfactory for its intended purpose.

As admitted in the Examiner's Answer (*See* page 5, lines 10, 06-26-08) it is conceded that Weiler does not teach ***a plurality of conductor segments serially connected together through a plurality of capacitors.*** However, it is submitted in the Examiner's Answer that ***Moslehi teaches the missing feature, and that a combination of Moslehi and Weiler is proper.***

Applicant maintains that the suggested combination is not proper due to a lack of the requisite motivation to make the suggested combination. As set forth in MPEP § 2143.01, motivation to combine or modify references can be found in the art itself, in the general knowledge of those skilled in the art, or in the nature of the problem to be solved. As will be appreciated below, none of these sources provide such motivation to modify the cited art, and upon a close analysis of at least some of these sources, ***a modification in accordance with the present invention is discouraged***. Consequently, such a modification is improper and the claims at issue are nonobvious over the cited art.

It is respectfully submitted that since Weiler teaches a particular combination of conductor segments in which ***each conductor segment is connected to its own separate high frequency generator***, a modification of Weiler in view of Moslehi would not be proper because ***such a modification would render Weiler unsatisfactory*** for its intended purpose. The Examiner's Answer of June 26, 2008 rejected the submitted argument by stating that: "Applicant is applying a piece-meal analysis of the cited prior art. Indeed, it is the fact that Applicant's narrowly perceived 'intended purpose' of the

Weiler reference is solely within the confines of Weiler itself and not the Examiner's rejection of the pending claims of *Weiler in view of Moslehi.*"

It is respectfully submitted that the highlighted purpose of Weiler is not being narrowly construed, as alleged in the Examiner's Answer, but instead ***is simply the explicit teaching set forth in the Weiler reference*** to explain why each conductor segment is connected to its own high frequency generator, ***which is associated with the very missing claim feature for which Moslehi is being applied.*** The Examiner's Answer simply ignores the explicit teaching of Weiler. One of ordinary skill in the art would simply not do this and consequently, the requisite motivation to combine Moslehi with Weiler does not exist.

Claim 13 of the present invention (the claim at issue) recites an ion shower system having a plasma source that comprises a plurality of conductor segments and ***a plurality of capacitors, wherein the conductor segments are serially connected through the plurality of capacitors***. Moslehi is being combined with Weiler to satisfy the series connection, which is missing in Weiler. ***However, the series connection is not simply missing in Weiler; rather Weiler specifically teaches away from a series connection***, and explicitly says that each conductor segment is coupled to its own high frequency generator.

More particularly, Weiler discloses in Figs. 1 and 2a-2j (*See* Figs. below and corresponding text) a plasma source having a plasma excitation electrode. As shown in Figs. 2a-2j, the excitation electrode (that corresponds to the claimed conductor segment of claim 13 according to the Office Actions) may comprise a single element or multiple segments. (*See, e.g.*, Figs. 2e-2j). ***In instances where the excitation electrode 3 consists of multiple segments, each segment or electrode is connected to its own separate matching network and its own separate high frequency generator.*** (*See, e.g.*, Col. 4, lines 27-30). According to Weiler, connecting each electrode segment to its own separate power source (generator) is provided ***to generate different kinds of plasmas so as to control and adjust beam characteristics.*** (*See, e.g.*, Col. 4, lines 30-33). Thus the intended purpose of Weiler is to have flexibility to generate different kinds of plasmas by being able to individually address or drive each electrode segment.

Therefore one of ordinary skill in the art would not be motivated to modify the multiple, isolated electrode segment configurations of Weiler by serially coupling such segments together *via* capacitors ***because doing so would contravene the intended purpose of Weiler*** (which was to separately drive each segment with its own power source to generate different plasmas and thus control and adjust beam characteristics) by eliminating the ability to generate different plasmas by individually driving the various conductor segments. Therefore ***the requisite motivation to combine the cited art does not exist***, and consequently the combination of Weiler and Moslehi is improper. MPEP § 2143.01 (V) (*citing* In re Gordon, 733 F.2d 900 (Fed. Cir. 1984) (holding that if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification).

Accordingly, reversal of the rejection is respectfully requested.

ii. ***A combination of Weiler and Moslehi does not teach the invention because such a combination does not result in a series connection of capacitors and conductor segments residing within the chamber, as recited in claim 13.***

Regarding claim 13, assuming *arguendo* even if the combination of Weiler and Moslehi was deemed proper (which applicant does not concede) the combination of Weiler and Moslehi fail to render claim 13 obvious because neither reference teach a series arrangement of ***conductor segments and capacitors that resides within the chamber***, as claimed. The Examiner's answer concedes that Weiler does not teach conductor segments (Figure 1, 2, 4 and Abstract), but instead asserts that such a limitation should not be given patentable weight. More particularly, the above highlighted distinction, according to the Examiner's Answer is merely a rearrangement of parts and thus the difference is considered obvious. (*See* Examiner's Answer, p. 13).

The argument put forth in the Examiner's Answer is a misconstruction of the case law. While it is conceded that two structures can be spatially moved in some instances (rearranged) and such a rearrangement is obvious, the above claim limitation is directed to whether a structural claim feature is within a chamber. ***This structural distinction is***

not a mere rearrangement of parts, and the failure to give this highlighted distinction its appropriate patentable weight is improper. Accordingly, reversal of the rejection is respectfully requested for at least this additional reason.

iii. The combination of Weiler and Moslehi does not teach an azimuthally symmetric arrangement of the conductor segments and capacitors, as recited in claim 20.

Claim 20 depends upon claim 13, and further recites that the ***series arrangement*** of conductor segments ***and*** capacitors are arranged within the chamber ***in an azimuthally symmetric fashion***. Initially, Moslehi does not teach the ***capacitors arranged azimuthally symmetric within the chamber*** as recited in the claimed invention. While ***conductor segments*** 186, 190 and 194 in Fig. 2 of Moslehi are arranged azimuthally, ***the capacitors that couple such segments together are not arranged in the azimuthally symmetric fashion as claimed***. Rather, such capacitors follow the direction of the jumper water channels 214, 218, 226 and 230 illustrated in Fig. 2, and which is ***NOT azimuthally symmetric***. ***Weiler does not remedy the deficiencies of Moslehi.*** In Figs. 2e-2j of Weiler, none of the multiple conductor segment configurations are arranged azimuthally.

In the Examiner's Answer, it states that Weiler teaches this feature by asserting that "azimuthally symmetric" means "a 360° path." (*See* Examiner's Answer, p. 15, middle paragraph). No support is provided in the Answer for this definition. It is respectfully submitted that the proposed definition of the claim term in the Examiner's Answer is incorrect. Rather, as set forth in Webster's New Collegiate Dictionary, azimuthal relates to an arc. This meaning is fully supported by the manner in which the term is employed in applicant's specification. It is respectfully submitted that the above claim terms are being misconstrued in order for the cited art to read on applicant's claim language. Further, it is respectfully submitted that with the correct interpretation of the claim language that the conductor segments that are azimuthally symmetric the cited prior art does not render such claim feature obvious. Accordingly, for at least this additional reason, reversal of the rejection is respectfully requested.

iv. The combination of Weiler and Moslehi does not teach a plurality of multi-cusp magnets on side portions of the chamber, as recited in claim 23.

Claim 23 depends upon claim 13, and further recites that side portions of the chamber comprise a plurality of ***multi-cusp magnets*** operable to produce multi-cusp magnetic fields. The combination of the cited references does not teach this feature.

The Examiner's Answer alleges that Weiler's coil arrangement illustrated in Fig. 1 thereof reads on a plurality of multi-cusp magnets. (*See* Examiner's Answer 06/26/07, p. 16, lines 20-23). The Answer then proceeds to give an extraordinarily creative, yet incorrect, interpretation of how a coil is a multi-cusp magnet.

Weiler does not teach a plurality of multi-cusp magnets as claimed. Weiler does teach a magnetic field coil arrangement, as illustrated in Fig. 1, however, ***such coil arrangement does not constitute multi-cusp magnets and do not produce multi-cusp fields as claimed.***

The Examiner's Answer incorrectly asserts that "Examiner believes that physical law mandates that a single coil current produces an electromagnet that possesses a "multi-cusp." (*See e.g.*, page 6, lines 20-21). Weiler clearly shows a magnetic field coil arrangement 4 and such coil arrangements are typically employed to generate a generally uniform dipole field. ***A plurality of multi-cusp magnets is not the same structurally as the unitary coil arrangement of Weiler, and the resultant dipole magnetic field is not anything similar to a plurality of multi-cusp magnetic fields produced by the plurality of multi-cusp magnets as claimed,*** and such a distinction is well known and appreciated by one of ordinary skill in the art.

Therefore claim 23 is non-obvious over the cited art for at least this additional reason. Accordingly, withdrawal of the rejection of claim 23 and depending claims 24-25 is respectfully requested.

B. CONCLUSION

For at least the above reasons, the claims currently under consideration are believed to be patentable over the cited references. Accordingly, it is respectfully requested that the rejections of the pending claims be reversed.

For any extra fees or any underpayment of fees for filing of this Brief, the Commissioner is hereby authorized to charge the Deposit Account Number 50-1733, EATNP146US.

Respectfully submitted,
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